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Changes of Food Preference in Children Aged 4 and 5 Years

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Food preference and food intake behaviors were investigated on 40 children for 21 kinds of foods using food-cards. Bell pepper, leek, radish and shiitake mushroom were the most unpopular foods to children. These are foods with unique smell, sliminess, and stickiness. Children seem to dislike such kinds of foods. Food preference and food intake behaviors in children have changed from the age of 4 to 5 years. For example, foods that over 60% or more of children answered to come to dislike more in five-year-olds than in four-year-olds were shiitake mushroom, natto, egg-plant and radish. Regarding rank difference correlation in five ranks of food preference and three ranks of food intake behaviors in children, correlation was statistically significant in all 21 kinds of foods with 1% significance. Children ate their favorite foods very much and didn't eat non-favorite foods. "Food preference" and "food intake behaviors" between four-year-old and five-year-old children, and between five-year-old children and their mothers seemed different.

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Key Words: food preference, food intake behaviors, favorite foods, comparison of food intake behaviors between children and their mothers, comparison of food preference between boys and girls.

1. Introduction

The present time is considered to be "the age of satisfaction" with emerging problems, such as poor eating habits due to flourishing instant foods and food service industries and solitary eating in double-income families¹⁾.

Since the taste discrimination ability is not completely developed during childhood, children do not

like foods with tastes of bitterness or sourness. So, if a food is unpleasant in color, taste, smell, and mouthfeel, they are likely to refuse such a food¹⁻⁴⁾. The tastes of bitterness and sourness, etc. are learned afterward, and children can accept such foods by accumulating eating experiences³⁻⁸⁾. Infants start to express their likes and dislikes for foods (food preference) and the age-period from 3 to 4 years is important for infants to establish proper eating habits and likes and dislikes for foods. If they establish poor eating habits, it may become a factor interfering with keeping their health in the future.

The most unpopular foods among children were reported to be bell pepper, shiitake mushroom, carrot, tomato and radish in the 1980's, and bell pepper, egg-plant, carrot, tomato, shiitake mushroom, onion and leek in the 1990's⁹⁻¹⁰⁾. Comparing the foods that children disliked in the last 20 years, bell pepper, carrot, tomato and shiitake mushroom were the most unpopular foods. The reason for the unpopularity of these foods may be explained by their characteristics.

Almost all of previous studies on children's likes and dislikes for foods in Japan were based on interviews with their parents¹¹⁻¹⁷⁾. There were very few studies carried out by direct interviews with children. The survey of "Your favorite and unfavorable foods" made by Ogawa et al. using a food model^{18,19)} is the only one report, as far as we know. In the present study, we paid much attention to the changes in food preference among children from the age of 4 years to the age of 5 years. The relation between children's and their mothers' food preference was also investigated since eating habits of children are often influenced by those of their mothers.

2. Subjects and methods

(1) Subjects

Fiftyone children aged 4 years (24 boys, 27 girls) in two kindergartens in the 1997 fiscal year in Kanzaki Town, Kanzaki County, Saga Prefecture,

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Japan, and 51 of their mothers were target populations in this survey.

The number of subjects who participated in this study both in June 1997 and in June 1998 were 15 boys (55.5%) and 25 girls (92.6%), totalling 40 children, and 40 mothers.

(2) Methods

The two-dimensional image development method, designed by Moriyama et al., with their original colored food cards (expressed as food cards hereafter), was carried out on 40 children and 40 of their mothers²⁰⁾.

As shown in Figure 1, the selected foods for the survey were 21 in total: Meats (meat), fish (fish), three dairy products (milk, cheese, yogurt), six kinds of green and yellow vegetables (tomato, carrot, bell pepper, spinach, leek, broccoli), seven kinds of other vegetables (cucumber, cabbage, onion, radish, burdock, eggplant, bean sprouts), one mushroom (shiitake mushroom), and two kinds of beans (green peas, natto [fermented soybeans]).

The 21 kinds of food cards (Figure 1) were made by sketching foods on small oval pieces of paper one by one and coloring and color copying them. Then, reusable glue was put on the back of the food cards to

stick to or tear off the answer sheet repeatedly.

Food preference was graded into five ranks ("like very much", "like a little", "undecided", "dislike a little", "strongly dislike") and food intake behaviors into three ranks ("eat very much", "eat a little", "eat none"), which were two-dimensionally displaced in tandem and row to be divided into 15 cells as shown in Figure 2.

The 21 kinds of food cards and the answer sheets were distributed to each child in the kindergarten in

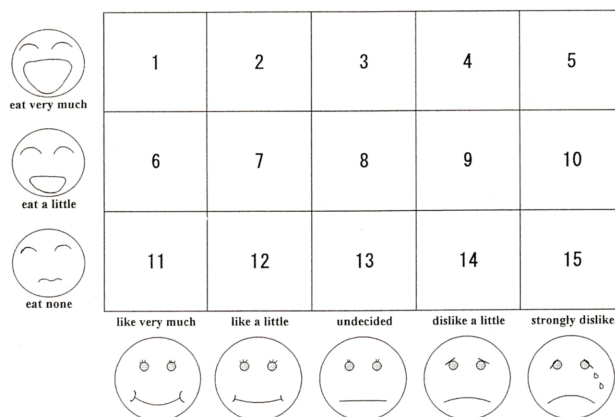


Figure 2. Answer sheet of food preference and food intake

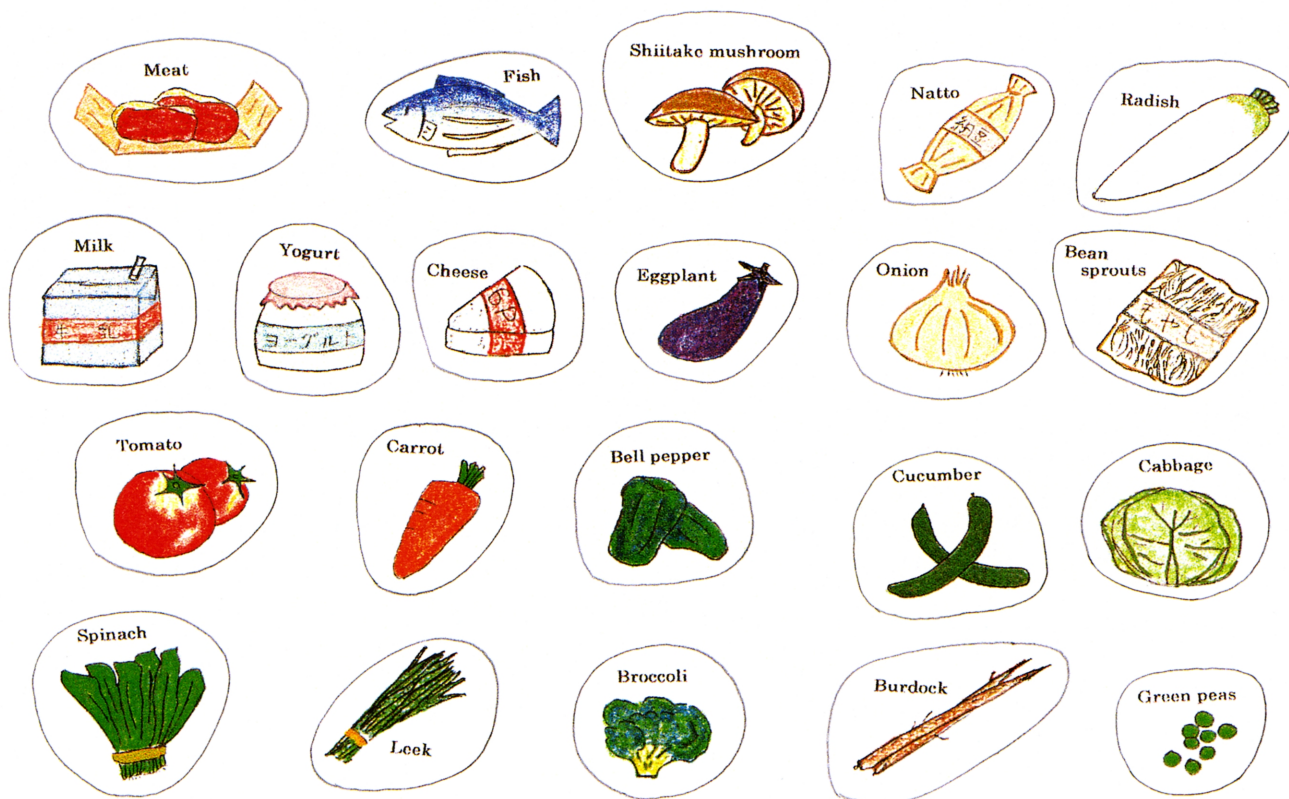


Figure 1. Illustration of 21 kinds of foods

June 1997 and in June 1998, and one of the authors (Yamasaki) explained to children how to answer the questions.

Regarding the procedure of how to answer these questions, firstly, the 21 kinds of food cards were shown to the children one by one, and they were asked to determine their answers among the five categories of food preference. Then, the cards were put into one of the five cells in the bottom of the answer sheet. Next, the children were asked to move the cards vertically and select one of three categories of food intake behaviors. They were instructed not to move the cards further if their answers were "eat none".

Similarly, the questionnaire was given to each mother, and they were asked to write their answers for food preference and food intake behaviors for each of 21 foods by themselves.

(3) Methods of statistical analysis

The different rank correlation coefficient between four-year-old and five-year-old children was calculated to examine the consistency of children's food preference using the consecutive five ranks and the food intake behaviors using the consecutive three ranks. A correlation coefficient of food preference and food intake behaviors between five-year-old children and their mothers was also examined.

A two-sided test was performed with the significance level of 5%. For statistical analysis, statistics software SPSS "Base 9.0J" was used.

3. Results

1) Changes over time in food preference and the food intake behaviors from the age of 4 to the age of 5

(1) Consistency of food preference

The results of the five-rank difference correlation test for food preference for 21 kinds of foods in four-

Table 1. Relationship of food preference^a between children at the age of 4 years and at the age of 5 years by Spearman's rank test.

Food items	Children			Boys			Girls		
	(n)	correlation coefficient	P value	(n)	correlation coefficient	P value	(n)	correlation coefficient	P value
Meat	(40)	0.090	0.581	(15)	0.211	0.451	(25)	0.072	0.733
Fish	(40)	0.256	0.111	(15)	0.154	0.585	(25)	0.377	0.063
Milk	(40)	0.253	0.115	(15)	0.210	0.454	(25)	0.341	0.095
Cheese	(40)	0.319	0.045 ★	(15)	0.135	0.631	(25)	0.400	0.047 ★
Yogurt	(40)	0.365	0.021 ★	(15)	0.228	0.415	(25)	0.402	0.046 ★
Tomato	(40)	0.428	0.006 ★★	(15)	0.487	0.066	(25)	0.404	0.045 ★
Carrot	(40)	0.210	0.194	(15)	0.133	0.636	(25)	0.273	0.186
Bell pepper	(40)	0.318	0.045 ★	(15)	0.454	0.089	(25)	0.137	0.515
Spinach	(40)	0.348	0.028 ★	(15)	0.359	0.189	(25)	0.347	0.089
Leek	(40)	0.467	0.002 ★★	(15)	0.352	0.198	(25)	0.583	0.002 ★★
Broccoli	(40)	0.309	0.053	(15)	0.509	0.053	(25)	0.200	0.338
Cucumber	(40)	0.345	0.029 ★	(15)	0.386	0.156	(25)	0.355	0.081
Cabbage	(40)	0.402	0.010 ★	(15)	0.321	0.244	(25)	0.433	0.031 ★
Green peas	(40)	0.045	0.785	(15)	-0.109	0.700	(25)	0.063	0.767
Onion	(40)	0.108	0.507	(15)	0.120	0.670	(25)	0.077	0.715
Radish	(40)	0.120	0.460	(15)	-0.118	0.676	(25)	0.177	0.398
Burdock	(40)	0.236	0.142	(15)	-0.089	0.753	(25)	0.394	0.051
Eggplant	(40)	0.245	0.127	(15)	0.229	0.411	(25)	0.207	0.321
Bean sprouts	(40)	0.542	0.000 ★★	(15)	0.539	0.038 ★	(25)	0.569	0.003 ★★
Shiitake mushroom	(40)	0.209	0.195	(15)	0.424	0.115	(25)	0.083	0.693
Natto	(40)	0.380	0.016 ★	(15)	0.578	0.024 ★	(25)	0.239	0.250

significant level: ★ : p < 0.05 ★★ : p < 0.01

^a: Food preference was graded into five ranks, "like very much", "like a little", "undecided", "dislike a little", "strongly dislike"

year-olds and five-year-olds are shown in Table 1.

Consistency was found in the three foods, such as bean sprouts, leek and tomato with 1% significance and the seven foods of cabbage, natto, yogurt, spinach, cucumber, cheese and bell pepper with 5% significance. The seven foods of bean sprouts, tomato, cabbage, yogurt, spinach, cucumber and cheese were popular foods among all children.

Consistency in boys was found in the two foods of natto and bean sprouts with 5% significance, and that in girls was found in six foods, the two foods of leek and bean sprouts with 1% significance, and the four foods of cabbage, tomato, yogurt and cheese with 5% significance. Leek and bean sprouts, which showed high consistency among girls, were popular foods. Only bean sprouts showed consistency in both boys and girls.

(2) Five ranks of food preference in four-year-old children and five-year-old children

The ratio of "like very much" was high for meat,

fish, milk and yogurt, in four-year-old children. The ratio of "strongly dislike" showed 30% or more in onion, bell pepper, burdock and eggplant in four-year-old children.

Both four-year-old children and five-year-old children disliked bell pepper, onion and radish. And percentage of "strongly dislike" was higher in five-year-old children.

Foods that 60% or more of children answered they came to like more in five-year-olds than in four-year-olds were cucumber, spinach, meat, and cabbage. On the contrary, foods that 60% or more of children answered they came to dislike more in five-year-olds than in four-year-olds were shiitake mushroom, natto, eggplant and radish. The ratio of change from "like very much" to "strongly dislike" was the highest in shiitake mushroom and eggplant.

Little change in food preference was found for milk and yogurt, all of which were very popular foods.

(3) Food intake behaviors

Table 2. Relationship of food intake^a between children at the age of 4 years and at the age of 5 years by Spearman's rank test.

Food item	Children			Boys			Girls		
	(n)	correlation coefficient	P value	(n)	correlation coefficient	P value	(n)	correlation coefficient	P value
Meat	(40)	-0.039	0.810	(15)	-0.153	0.585	(25)	0.010	0.961
Fish	(40)	-0.029	0.860	(15)	-0.127	0.653	(25)	0.020	0.925
Milk	(40)	0.368	0.020	(15)	0.360	0.187	(25)	0.387	0.056
Cheese	(40)	0.245	0.127	(15)	0.373	0.171	(25)	0.168	0.422
Yogurt	(40)	0.096	0.558	(15)	-0.234	0.400	(25)	0.252	0.224
Tomato	(40)	0.156	0.336	(15)	-0.022	0.937	(25)	0.266	0.198
Carrot	(40)	0.125	0.443	(15)	0.240	0.390	(25)	0.049	0.817
Bell pepper	(40)	0.017	0.917	(15)	-0.147	0.600	(25)	0.104	0.622
Spinach	(40)	-0.024	0.882	(15)	-0.218	0.434	(25)	0.087	0.680
Leek	(40)	0.181	0.265	(15)	0.531	0.042	(25)	-0.084	0.688
Broccoli	(40)	0.192	0.235	(15)	0.217	0.438	(25)	0.210	0.314
Cucumber	(40)	0.534	0.000	(15)	0.460	0.084	(25)	0.540	0.005
Cabbage	(40)	0.470	0.002	(15)	0.260	0.349	(25)	0.201	0.336
Green peas	(40)	0.052	0.751	(15)	-0.005	0.986	(25)	0.072	0.731
Onion	(40)	0.119	0.463	(15)	0.142	0.614	(25)	0.120	0.568
Radish	(40)	0.098	0.546	(15)	-0.191	0.495	(25)	0.207	0.320
Burdock	(40)	0.456	0.003	(15)	-0.333	0.225	(25)	0.155	0.461
Eggplant	(40)	0.138	0.397	(15)	0.082	0.771	(25)	0.174	0.405
Bean sprouts	(40)	0.154	0.343	(15)	0.280	0.311	(25)	0.077	0.715
Shiitake mushroom	(40)	-0.007	0.967	(15)	-0.191	0.495	(25)	0.006	0.978
Natto	(40)	0.602	0.000	(15)	0.791	0.000	(25)	0.419	0.037

significant level: ★ : p < 0.05 ★★ : p < 0.01

^a: Food intake behaviors were graded into three ranks, "eat very much", "eat a little", "eat none"

Table 2 shows the results of rank difference correlation test with three ranks of food intake behaviors in 21 foods at the age of four and five.

The rank difference correlation showed consistency with 1% significance in the four foods of natto, cucumber, cabbage and burdock and with 5% significance in milk in all children. The food intake behaviors of natto showed the highest consistency. Children at the age of five ate natto less than at the age of four.

Consistency was found in the two foods of natto with 1% significance and leek with 5% significance in boys, while it was found in the two foods of cucumber with 1% significance and natto with 5% significance in girls.

Natto was the only food that showed the same consistency in boys and girls.

(4) Three ranks of food intake behaviors in four-year-old children and five-year-old children

The ratio of "eat very much" was 75% or more for

meat, milk, yogurt and carrot in four-year-old children. And the ratio of "eat very much" was generally lower in five-year-old children than in four-year-old children. The ratio of "eat none" was 20% or less in all 21 kinds of foods in four-year-old, but it was 20% or more for natto, bell pepper, eggplant, shiitake mushroom, leek, onion and radish, in five-year-old children.

There was a tendency that the food intake behaviors became worse when children went from the age of four to the age of five.

There were many foods that children came not to eat when they became five years old, and the foods that 70% or more children came not to eat were natto, yogurt, burdock, shiitake mushroom, radish and cheese. Especially the number of children who didn't eat natto, bell pepper, eggplant and shiitake mushroom increased when they became five years old. These foods were unpopular foods among children. There was a tendency that children came not to eat foods that they came to dislike.

Table 3. Relationship of food preference^a and food intake^b among children at the age of 5 years by Spearman's rank test.

Food item	Children				Boys				Girls			
	(n)	correlation coefficient	P value		(n)	correlation coefficient	P value		(n)	correlation coefficient	P value	
Meat	(40)	0.595	0.000	★★	(15)	0.732	0.002	★★	(25)	0.530	0.006	★★
Fish	(40)	0.759	0.000	★★	(15)	0.800	0.000	★★	(25)	0.769	0.000	★★
Milk	(40)	0.716	0.000	★★	(15)	0.605	0.017	★	(25)	0.802	0.000	★★
Cheese	(40)	0.697	0.000	★★	(15)	0.892	0.000	★★	(25)	0.641	0.001	★★
Yogurt	(40)	0.756	0.000	★★	(15)	0.891	0.000	★★	(25)	0.668	0.000	★★
Tomato	(40)	0.763	0.000	★★	(15)	0.581	0.023	★	(25)	0.865	0.000	★★
Carrot	(40)	0.662	0.000	★★	(15)	0.511	0.052		(25)	0.758	0.000	★★
Bell pepper	(40)	0.809	0.000	★★	(15)	0.773	0.001	★★	(25)	0.786	0.000	★★
Spinach	(40)	0.671	0.000	★★	(15)	0.456	0.087		(25)	0.738	0.000	★★
Leek	(40)	0.910	0.000	★★	(15)	0.911	0.000	★★	(25)	0.904	0.000	★★
Broccoli	(40)	0.746	0.000	★★	(15)	0.678	0.005	★★	(25)	0.802	0.000	★★
Cucumber	(40)	0.627	0.000	★★	(15)	0.817	0.000	★★	(25)	0.557	0.004	★★
Cabbage	(40)	0.716	0.000	★★	(15)	0.641	0.010	★	(25)	0.723	0.000	★★
Green peas	(40)	0.737	0.000	★★	(15)	0.832	0.000	★★	(25)	0.689	0.000	★★
Onion	(40)	0.767	0.000	★★	(15)	0.711	0.003	★★	(25)	0.798	0.000	★★
Radish	(40)	0.733	0.000	★★	(15)	0.332	0.226		(25)	0.857	0.000	★★
Burdock	(40)	0.753	0.000	★★	(15)	0.855	0.000	★★	(25)	0.718	0.000	★★
Eggplant	(40)	0.759	0.000	★★	(15)	0.754	0.001	★★	(25)	0.712	0.000	★★
Bean sprouts	(40)	0.732	0.000	★★	(15)	0.599	0.018	★	(25)	0.811	0.000	★★
Shiitake mushroom	(40)	0.720	0.000	★★	(15)	0.873	0.000	★★	(25)	0.615	0.001	★★
Natto	(40)	0.771	0.000	★★	(15)	0.928	0.000	★★	(25)	0.644	0.001	★★

significant level: ★ : p < 0.05 ★★ : p < 0.01

^a: Food preference was graded into five ranks, "like very much", "like a little", "undecided", "dislike a little", "strongly dislike"

^b: Food intake behaviors were graded into three ranks, "eat very much", "eat a little", "eat none"

70% or more of children didn't change their food intake behaviors for the three foods of cucumber, milk and meat.

(5) Consistency in five ranks of food preference and three ranks of the food intake behaviors

The results of rank difference correlation test with five ranks of food preferences and three ranks of food intake behaviors for 21 kinds of foods in five-year-old children are shown in Table 3.

Regarding rank difference correlation in five ranks of food preferences and three ranks of food intake behaviors in children, consistency was observed in all 21 foods with 1% significance. Children ate their favorite foods very much and didn't eat foods they disliked, and there was a close relationship between the food preference and food intake behaviors.

Consistency was found in 18 of 21 foods in boys, though the three foods of carrot, spinach and radish showed high food preferences but small food intake behaviors with no consistency. Consistency was found

in all 21 foods with 1% significance in girls and they ate favorite foods very much and ate those they didn't like a little.

2) Correlation of food preference between children and their mothers

(1) Comparison of food intake behaviors between five-year-old children and their mothers

Table 4 shows consistency of three ranks of food intake behaviors between five-year-old children and their mothers.

No foods showed consistency of three ranks of the food intake behaviors between five-year-old children and their mothers.

Consistency between boys and their mothers was found only in the two foods of onion and natto with 5% significance. Especially, natto was the food that many boys and their mothers disliked and the behaviors of its intake were lower in boys than in their mothers. Consistency between girls and their mothers

Table 4. Relationship of food intake^a between children at the age of 5 years and their mothers by Spearman's rank test.

Food item	Children and mothers			Boys and mothers			Girls and mothers		
	(n)	correlation coefficient	P value	(n)	correlation coefficient	P value	(n)	correlation coefficient	P value
Meat	(40)	-0.007	0.965	(15)	-0.153	0.585	(25)	0.016	0.939
Fish	(40)	-0.075	0.644	(15)	-0.423	0.117	(25)	0.092	0.661
Milk	(40)	0.109	0.503	(15)	0.213	0.446	(25)	0.098	0.643
Cheese	(40)	-0.051	0.757	(15)	-0.113	0.689	(25)	-0.120	0.568
Yogurt	(40)	0.105	0.518	(15)	0.400	0.140	(25)	-0.070	0.739
Tomato	(40)	0.309	0.053	(15)	0.300	0.277	(25)	0.311	0.130
Carrot	(40)	-0.048	0.768	(15)	-0.218	0.435	(25)	0.052	0.807
Bell pepper	(40)	0.027	0.869	(15)	-0.200	0.475	(25)	0.191	0.360
Spinach	(40)	0.069	0.674	(15)	-0.145	0.621	(25)	-0.295	0.220
Leek	(40)	-0.004	0.979	(15)	0.256	0.356	(25)	-0.210	0.313
Broccoli	(40)	0.275	0.085	(15)	0.360	0.188	(25)	0.229	0.271
Cucumber	(40)	-0.122	0.454	(15)	-0.319	0.246	(25)	-0.015	0.941
Cabbage	(40)	0.221	0.170	(15)	0.023	0.934	(25)	0.415	0.039 ★
Green peas	(40)	-0.124	0.447	(15)	0.104	0.712	(25)	-0.282	0.172
Onion	(40)	0.114	0.486	(15)	0.612	0.015 ★	(25)	-0.215	0.302
Radish	(40)	0.040	0.808	(15)	0.136	0.628	(25)	0.060	0.775
Burdock	(40)	-0.130	0.424	(15)	-0.118	0.675	(25)	-0.138	0.509
Eggplant	(40)	0.245	0.128	(15)	0.078	0.783	(25)	0.408	0.043 ★
Bean sprouts	(40)	-0.098	0.548	(15)	-0.094	0.738	(25)	-0.101	0.632
Shiitake mushroom	(40)	0.060	0.713	(15)	0.101	0.721	(25)	0.084	0.689
Natto	(40)	0.309	0.053	(15)	0.524	0.045 ★	(25)	0.160	0.444

significant level: ★ : $p < 0.05$

^a: Food intake behaviors were graded into three ranks, "eat very much", "eat a little", "eat none"

was found in two foods of cabbage and eggplant with 5% significance. Cabbage showed great food intake behaviors in both girls and their mothers and was a food of "a food eaten very much," and eggplant was a food of "a food eaten a little," in girls and their mothers.

(2) Food preference and food intake behaviors between children and their mothers

Foods that the ratio of the same answer exceeded 60% or more between boys and their mothers were cheese and yogurt that were popular with a high ratio of "like very much" in both boys and their mothers. But, there were no foods with the same answer ratio of 60% or more between girls and their mothers.

Foods with the ratio of the same answer of 60% or more in food intake behaviors were meat, onion, fish, yogurt and shiitake mushroom between boys and their mothers, but only meat between girls and their mothers.

4. Discussion

The problem in this study was that the validity of the survey method was not necessarily clear. In the answer sheet, choices for food preference (like very much, like a little, undecided, dislike a little, strongly dislike) and those for food intake behaviors (eat very much, eat a little, eat none) are crossed (two dimensional), so that it was not sure whether children understood clearly the system when they were asked to answer.

Furthermore, the words "food intake behaviors" with ranks of "eat very much," "eat a little," and "eat none" in this paper were vague definitions, whether it exactly meant "food intake frequency" or "amount of food intake." As the authors thought it was difficult for children to answer exactly "food intake frequency" or "amount of food intake", we employed the two-dimensional image development method. But, it must be remembered that results obtained at the age of four and at the age of five were relatively atable

In this study, if the children's answers, namely, "dislike" or "eat none" can be translated to "low frequency of food intake" or "small amount of food intake", the results will be explained as follows.

"Food preference" and "food intake behaviors" between children at the age of four and five, and between children and their mothers seem different.

For example, foods that many children disliked were different from boys to girls. Boys disliked natto and girls strongly disliked tomato and leek. In addition,

children came to dislike radish, shiitake mushroom, eggplant, natto, tomato, and leek more strongly at the age of five than at the age of four. According to the report by Nakagawa et al., the most unpopular foods among children were bell pepper, leek, shiitake mushroom, carrot, radish, tomato, broccoli, bean sprouts, fish, and burdock, etc⁽¹⁰⁾. Our results were quite same. Bell pepper, leek, radish and shiitake mushroom were the most unpopular foods in children. These are foods with unique smell, sliminess, and stickiness. Children seem to dislike such kinds of foods.

Children are said to be influenced by parent's food-related behaviors⁽²¹⁻²⁵⁾. But, as shown in this study, relation of likes and dislikes for foods were not the same between children and their mothers. For example, good consistency of food intake behaviors was found in meat, onion, fish, yogurt and shiitake mushroom between boys and their mothers, but only in meat between girls and their mothers. More detailed study on food preference and food intake behaviors will be needed in future.

5. Conclusion

Food preference and food intake behaviors were investigated on 40 children (15 boys and 25 girl) and their mothers for 21 kinds of foods using food-cards.

Bell pepper, leek, radish and shiitake mushroom were the most unpopular foods in children. These are foods with unique smell, sliminess, and stickiness. Children seem to dislike such kinds of foods.

Food preference and food intake behaviors in children changed from the age of 4 to 5. For example, foods that 60% or more of children answered to come to dislike more in five-year-olds than in four-year-olds were shiitake mushroom, natto, eggplant and radish, especially the ratio of change from "like very much" to "strongly dislike" was the highest in shiitake mushroom and eggplant.

Regarding rank difference correlation in five ranks of food preference and three ranks of food intake behaviors in children, consistency was observed in all 21 foods with 1% significance. Children ate their favorite foods very much and didn't eat foods they disliked, and there was a close relationship between the food preference and food intake behaviors, especially in girls.

Foods with the ratio of the same answer of 60% or more in food intake behaviors were meat, onion, fish, yogurt and shiitake mushroom in boys and their mothers, but only meat between girls and their mothers. Food intake behaviors in boys are very similar with those of their mothers.

"Food preference" and "food intake behaviors" between four-year-old and five-year-old children, and between five-year-old children and their mothers seemed variable.

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